

Genus *Dira* Hübner, [1819] Autumn Widows

In: Hübner, [1816-[1826]. *Verzeichniss bekannter Schmettlinge* 60 (432 + 72 pp.). Augsburg.
Type-species: *Papilio clytus* Linnaeus, by subsequent designation (Scudder, 1875.
Proceedings of the American Academy of Arts and Sciences 10: 157 (91-293).).

= *Leptoneura* Wallengren, 1857. *Öfversigt af Kongl. Vetenskaps-Akademiens Förhandlingar*.
Stockholm annis 1838-1845. *Collecta* (n.s.) 2 (4): 31 (55 pp.). Type-species: *Papilio clytus*
Linnaeus, by monotypy.

The genus *Dira* belongs to the Family Nymphalidae Rafinesque, 1815; Subfamily Satyrinae Boisduval, 1833; Tribe Dirini Verity, 1953. The other genera in the Tribe Dirini in the Afrotropical Region are *Paralethe*, *Aeropetes*, *Tarsocera*, *Torynesis*, *Serradinga* and *Dingana*.

Dira (**Autumn Widows**) is an Afrotropical genus containing four species, all from South Africa.

Relevant literature:

Garvie, 2005b [Collecting notes].

**Dira clytus* (Linnaeus, 1764)# Western Cape Autumn Widow



Western Cape Autumn Widow (*Dira clytus*) Kleinmond, Western Cape Province. Left – male. Centre and right –female.
Images courtesy Steve Woodhall.

Papilio clytus Linnaeus, 1764. *Museum Ludovicae Ulrica Reginae* 268 (720 pp.). Holmiae.

Leptoneura clytus Linnaeus. Trimen, 1866a.

Leptoneura clytus (Linnaeus, 1764). Trimen & Bowker, 1887a.

Dira clytus Linnaeus. Swanepoel, 1953a.

Dira clytus Linnaeus, 1764. Dickson & Kroon, 1978.

Dira clytus (Linnaeus, 1764). Pringle *et al.*, 1994: 54.



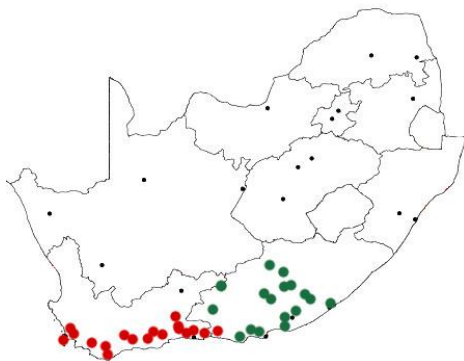
Dira clytus clytus. Male (Wingspan 50 mm). Left – upperside; right – underside.
Table Mountain, Western Cape Province, South Africa. 25 March 2007. J. Dobson.
Images M.C. Williams ex Dobson Collection.



Dira clytus clytus. Female (Wingspan 50 mm). Left – upperside; right – underside.
Brenton-On-Sea, Western Cape Province, South Africa. 10 April 1995. G. Henning.
Images M.C. Williams ex Henning Collection.

Alternative common name: Kaapse Herfsweduwee (Afrikaans).

Type locality: [South Africa]: “Cap. b. Spei. Tulbagh”. [Lectotype designated by Honey & Scoble, 2001: 313].



Distribution: South Africa –
Eastern Cape Province, Western Cape
Province [ssp. *clytus* – red dots]

Eastern Cape Province [ssp. *eurina* –
green dots]

Distribution: South Africa.

Habitat: Grassland and grassy areas in fynbos. Also grassy plots (especially long kikuyu (*Pennisetum clandestinum*) grass) in suburban settings (Pringle *et al.*, 1994).

Habits: Specimens fly just above the grass with a slow, floppy flight. Females appear to be less active than males (Pringle *et al.*, 1994).

Flight period: The nominate subspecies flies from March to May and subspecies *eurina* from mid-February to the end of March. Quickelberge notes that the emergence of *eurina* appears to be mediated by

falling temperatures in late summer. Populations of *eurina* at Stutterheim (900 m) emerge 6 weeks earlier than do those at sea-level, 80 km away, because of an earlier fall in temperature at the higher altitude in autumn (Pringle *et al.*, 1994).

Early stages:

Trimen & Bowker, 1887, Vol. 1: 93 [as *Leptoneura Clytus* (L.); pupa only; Cape Town, Western Cape].

“**Pupa.** Dull brownish-grey, speckled with fuscous. On back of abdomen, a transverse row of thin small indistinct fuscous spots occupying middle line of each segment; on under side of abdomen fuscous irroration close and thick, leaving two convergent clear streaks of ground-colour from ends of wing-covers to anal point. Central line of breast covering haustellum defined by two fuscous longitudinal streaks. Neuration of wings distinctly defined with brown on wing-covers. The pupa here described was found by Mr. T.D. Butler, the taxidermist of the South-African Museum, on the 26th March 1873, under a large stone on the ascent of the Devil’s Peak, Cape Town. It was lying perfectly free, without attachment of any kind. The imago, a fine female, emerged on 8th April.”

Clark, 1943: 143 [complete account].

Clark, in Van Son, 1955: 59 [complete account].

Egg – scattered indiscriminately in grass while female is perched on blade of grass; eggs first laid then shot away; pale watery yellow gradually becoming rich yellow, then pale brown; vary in size between females but average 0,9 mm in diameter by 0,9 mm high; surface with finely reticulated pattern; egg stage 11-16 days. **First instar larva** – eats way out near top of egg and consumes shell; at first feeds from edge of grass blade; white with dark pink dorsal and lateral stripes; below lateral ridge another broken and even darker stripe; on each side of dorsal stripe a row of black setae, one seta per segment, except on first where there are two; on right side, from segments 1 to 10 and on left from segments 1 to 3 these setae bend forward, remainder backward; midway between dorsal and subdorsal lines another row of whitish yellow setae, one on each segment, except on first segment where there are three and on segment 13, where it is missing; On segments 1 to 10 these setae bend forward on both sides, on remainder they bend backward; on lateral line another row of setae, one on each segment, except on last; on segment 1 a small seta in front of main seta, all these setae black; on lateral ridge a pair of light brown setae on each segment, except segments 2, 3 and 12, which only have one each; of the paired setae one points down, the other, which is placed slightly above and behind, points outward and backward; prolegs with seven setae round a dark patch; head dull yellow with dark central macula; setae black, finely spined and arise from dark patches with radiating light lines; three ocelli surrounded by black patches; mandibles plain, except for slight scallop near lower edge; after second day red dorsal line is split and edged with dull pale blue; below, lateral line is same colour but lateral ridge remains white; legs amber and prolegs yellow with dull shield; later edge of blue flanking dorsal line turns dull yellow and ultimately breaks away to form a subdorsal line, which eventually turns reddish; same happens to portion below lateral line and a red line is formed in region of spiracles; ground-colour gradually becomes duller; grows from 2 to 4,5-5,5 mm in 7-11 days; before moulting larva spins a mat on grass stalk or dead blade of grass to which claspers are fastened; remains motionless for three days before moulting; discarded skin not eaten. **Second instar larva** – ground-colour dull pale yellow, mottled with reddish brown; stripes ill-defined and broken; lateral ridge white; below this blackish purple; to the primary setae astride split red-brown dorsal stripe two smaller setae are added on each segment on posterior wrinkles; subdorsally primary setae similarly augmented and lateral row of setae is present; lesser setae sparingly scattered over body; on lateral ridge of each segment a cluster of three setae in addition to a few lesser setae; head light yellow-brown; setae more numerous and indentations appear between setae on upper portions of epicrania; as larvae grow they tend to conceal themselves by day and feed at night; grow to 8 mm in 9-18 days. **Third instar larva** – dull yellowish white, sprinkled with red-brown streaks; a double red-brown dorsal line and a row of red-brown blotches subdorsally; lateral ridge white, broadly bordered with black below, this black merging into heavy red-brown mottling; prolegs with a slight greenish tinge; primary setae as in previous instar but ends now slightly clubbed; the number of smaller setae increased in number; head similar but there are more setae and indentations; larvae feed from tip or edge of grass blade at night; grow to 12-15 mm in 12-18 days. **Fourth instar larva** – ground-colour dull pale yellow with black markings giving pronounced pattern; slightly clubbed primary setae on white tubercles, the smaller setae now numerous; head much darker than in previous instar and with more setae and indentations; larva feeds at long intervals and makes very deliberate bites; if disturbed larvae drop off and lie motionless among debris; grows to 18-22 mm in 19-30 days (up to 55 days). **Fifth (final) instar larva** – ground-colour dull pale yellow; black markings less intense than in previous instar; primary setae golden brown, sceptre-shaped, mounted on white tubercles; small setae very numerous and are miniatures of the primaries; spiracles black and slightly raised, generally hidden in a wrinkle; body surface covered with minute fluted tubercles of various colours, which are mainly responsible for the colour patterns; head brown with black markings; surface covered with spined setae placed on fluted tubercles, these interspaced on upper half of epicrania with circular indentations; mandibles brown, shading to black on biting edge, which is plain; larvae soon attain full length (30-32 mm) then broaden; are drawn in with stumpy appearance when at rest;

movements very sluggish; feed at night; pupation occurs at base of grass clumps – larva simply curls up and pupates. **Pupa** – at first yellowish brown, gradually darkening; body mottled with black and wing-cases heavily striped with black; body and thorax sparingly studded with minute flower-shaped setae on small tubercles.

Dickson, 1972 [short account].

Larval food:

Cynodon dactylon (L.) Pers. (Poaceae) [Kroon, 1999].

Ehrharta erecta Lam. (Poaceae) [Clark, *in* Van Son, 1955: 61].

Ficinia indica (Lam.) Pfeiff (Cyperaceae) [Kroon, 1999].

Hyparrhenia hirta (L.) Stapf (Poaceae) [Kroon, 1999].

Merxmuellera stricta (Schrad.) Conert (Poaceae) [Kroon, 1999].

Oropetium capense Stapf (Poaceae) [Kroon, 1999].

Panicum deustum Thunb. (Poaceae) [Clark, *in* Van Son, 1955: 61].

Stenotaphrum secundatum (Walter) Kuntze (Poaceae) [Dickson & Kroon, 1978: 38; as *Stenotaphrum glabrum*].

Stipa dregeana Steud. (Poaceae) [Clark, *in* Van Son, 1955: 61].

Tribolium uniola (L.f.) Renvoize (Poaceae) [Kroon, 1999].

Dira clytus clytus (Linnaeus, 1764)#
Western Cape Autumn Widow

Papilio clytus Linnaeus, 1764. *Museum Ludovicae Ulricae Reginae* 268 (720 pp.). Holmiae.

Dira clytus clytus (Linnaeus, 1764). Pringle *et al.*, 1994: 54.



Dira clytus clytus. Male (Wingspan 50 mm). Left – upperside; right – underside.
Table Mountain, Western Cape Province, South Africa. 25 March 2007. J. Dobson.
Images M.C. Williams ex Dobson Collection.



Dira clytus clytus. Female (Wingspan 50 mm). Left – upperside; right – underside.
Brenton-On-Sea, Western Cape Province, South Africa. 10 April 1995. G. Henning.
Images M.C. Williams ex Henning Collection.

Type locality: [South Africa]: “Cap. b. Spei. Tulbagh”. [Lectotype designated by Honey & Scoble, 2001: 313].

Distribution: South Africa (Eastern Cape Province, Western Cape Province).

Specific localities:

Western Cape Province – Tulbagh (TL); Cape Town (Trimen & Bowker, 1887); Stellenbosch (Swanepoel, 1953); Worcester (Swanepoel, 1953); Mossel Bay (Swanepoel, 1953); Caledon (Swanepoel, 1953); Oudtshoorn (Swanepoel, 1953); Knysna (Swanepoel, 1953); Plettenburg Bay (Swanepoel, 1953); Nature’s Valley (Mecenero *et al.*, 2013).

tisiphone von Rottenburg, 1775: 16 (as sp. of *Papilio*). [get ref. - not in Ackery *et al.*, 1995]. No locality given.

Dira clytus eurina Quickelberge, 1978#
Eastern Cape Autumn Widow

Dira clytus eurina Quickelberge, 1978. *Entomologist’s Record and Journal of Variation* **90**: 31 (25-32).

Dira clytus eurina Quickelberge, 1978. Pringle *et al.*, 1994: 54.



Dira clytus eurina. Male (Wingspan 50 mm). Left – upperside; right – underside.
East London, Eastern Cape Province, South Africa. 1 April 1978. P. Kruger.
Images M.C.Williams ex Henning Collection.



Dira clytus eurina. Female (Wingspan 50 mm). Left – upperside; right – underside.
Cathcart, Eastern Cape Province, South Africa. 27 February 1964. W. Teare.
Images M.C.Williams ex Henning Collection.

Alternative common name: Oos-Kaapse Herfsweduwee (Afrikaans).

Type locality: South Africa: “Grahamstown, eastern Cape”.

Diagnosis: Differs from the nominate subspecies in its larger size, narrower postdiscal arc of cream-

coloured spots on the forewing upperside, and a central white pupil in the blue iris of each ocellus (Pringle *et al.*, 1994).

Distribution: South Africa (Eastern Cape Province).

Specific localities:

Eastern Cape Province – Grahamstown (TL); Humansdorp district (Swanepoel, 1953), Somerset East (Swanepoel, 1953); Seymour (Swanepoel, 1953); Katberg (Swanepoel, 1953); Molteno (Swanepoel, 1953); East London district (Swanepoel, 1953); Gamtoos River (Pringle *et al.*, 1994); Aberdeen (Pringle *et al.*, 1994), Kareedouw (Mecenero *et al.*, 2013).

****Dira jansei* (Swierstra, 1909)#**
Argus Autumn Widow



Females of Argus Widow (*Dira jansei*), upperside (left) and underside (right). Strydpoortberge, Limpopo Province. Images courtesy Raimund Schutte.

Leptoneura jansei Swierstra, 1909. *Annales of the Transvaal Museum* 1: 175 (175-178).

Dira jansei Swierstra. Swanepoel, 1953a.

Dira jansei (Swierstra, 1911). Dickson & Kroon, 1978. [date of authorship erroneous]

Dira jansei (Swierstra, 1909). Pringle *et al.*, 1994: 55.



Dira jansei. Male. Left – upperside; right – underside.
Donkerkloof, Limpopo Province, South Africa. 15 February 2014.
Images M.C. Williams ex J. Greyling Collection.



Dira jansei. Female. Left – upperside; right – underside.
Donkerkloof, Limpopo Province, South Africa. 15 February 2014.
Images M.C. Williams ex J. Greyling Collection.

Alternative common name: Veeloog-weduwee (Afrikaans).

Type locality: [South Africa]: “Warmberg, near Pietersburg, Zoutpansberg District”.

Diagnosis: Characterized by five smallish ocellate spots on the upperside of the forewing (Pringle *et al.*, 1994).

General notes: Janse’s Widow was discovered by Dr A. Janse, a renowned moth taxonomist, who captured a single specimen on the farm Warmberg in the Chunies Mountains (now the Strydpoortberge) in March, 1904. The species was described from this single specimen by Swierstra, a colleague of Janse’s at the Transvaal Museum (now Ditsong Museum), Pretoria, who named it for its discoverer. The species was not seen again for more than 30 years until David Swanepoel captured a small series at Makapan’s Cave, near Mokopane (Potgietersrus), in February, 1935. In March, 1940 W. Lotz found the species on the Farm Tubex, in the eastern part of the Strydpoort Mountains. More recently the species has been found much further to the south-east, in the Mariepskop area (Pringle *et al.*, 1994), in Mpumalanga Province.



Distribution: South Africa –
Limpopo Province, Mpumalanga.

Distribution: South Africa (Limpopo Province, Mpumalanga).

Specific localities:

Limpopo Province – Farm Warmberg, Chuniesberg (TL; Janse); Chuniespoort (Swanepoel, 1953); Makapan’s Cave (Swanepoel, 1953); Farm Tubex, Wolkberg (W. Lotz, *vide* Swanepoel, 1953); Strydpoort Mountains at 24 12 33S, 29 37 07E; 1330 m (J. & C. Dobson).

Mpumalanga – Blyde River Canyon Nature Reserve (Pringle *et al.*, 1994); Marieps Kop (Pringle *et al.*, 1994).

Habitat: Grassland-woodland ecotone (Pringle *et al.*, 1994). The Dobson locality noted above is in Ohrigstad Mountain Bushveld, bordering on Strydpoort Summit Sourveld and Wolkberg Dolomite Grassland (Mucina & Rutherford, 2006).

Habits: The flight is slow and specimens often settle in the shade of trees (Pringle *et al.*, 1994).

Flight period: February and March (Pringle *et al.*, 1994).

Early stages:

Clark, 1943: 140.

“**Egg.** The eggs are scattered in the grass. They are very pale watery yellow when laid and do not darken much until the larva takes shape inside. They are 1 mm in diameter by 1.1 mm high, with a very fine tracery, only visible under high magnification. The larva emerges after twelve days. **Larva. First instar.** The young larva eats its way out near the top of the egg and usually eats the remaining shell as well. It then crawls away to the edge of a blade of grass or rests on the stem. Newly hatched larvae are 2.5 mm long; the ground-colour is white with pinkish-red dorsal and lateral lines. The portion below the lateral ridge is also touched with the same colour. The day after emerging a faint broken subdorsal line appears, this darkens and gradually turns to a pale dull green; at the same time the portion of the body below the lateral line is shaded dull pale yellow. On the third day the subdorsal line is touched with red. The lines now fade away to yellowish-brown on the last three segments. On each side of the dorsal line is a row of setae on conical tubercles. Segment I has two setae, the remaining segments one each, those on segments I-X all bend forward on both sides, the remainder backward. Lower down, in the middle of the lateral line, is another row of setae. On the first segment is a single white seta, on the second and third is a black seta with a smaller seta behind; slightly above, on the fourth to the eleventh there is a single black seta, all bending forward and outward. Segment XII has a single black seta bending backward. On the lateral ridge each segment has two setae. The prolegs are adorned with a cluster of setae on a dark patch. The head is dull pale yellow with a slight frontal patch of brown; setae dark brown with long hairs over the greater length; mandibles plain; ocelli situated on black patches. This stage lasts 7 or 8 days and larvae grow to 5 mm. Larvae moult among dead grass or on the stems. They do not eat the discarded skin. **Second instar.** The larva is now dull white with purple-red dorsal, subdorsal and lateral stripes and just below the spiracles it is dusted with yellowish-brown shading to purplish-red on the lower edge. The lateral ridge is faintly touched with yellow, and below it is purplish-red except on legs and prolegs which are greenish-yellow. As the larvae grow, the subdorsal line breaks up, forming a thick line on the anterior wrinkle, fading away posteriorly; the space between the dorsal and subdorsal lines turns yellowish. Area below the subdorsal line white at first, but later becomes speckled with yellowish-brown. The primary setae are now straight and pointed, and additional setae appear in the respective rows, while smaller setae are sparingly scattered over the body. The head is dull yellow with numerous dark brown setae. In between the setae on the upper portion of the epicrania are slight indentations and a central brown stripe; on each side is another brown stripe, while above the ocelli there is a brown patch. The larvae are now mostly night feeders; bites are very deliberate and feeding is on the edge of the blades of grass. When not feeding, two or three larvae may cluster together near the roots. This stage lasts about eight days when the larvae attain a length of 8-8.5 mm. As in the previous stage moulting takes place on a stalk or among dead leaves. **Third instar.** The larvae are now dull pale yellow with the black dorsal line on fourth to ninth segments split, leaving a dull yellow line spotted with black in the centre, heavily so on the anterior wrinkle; below this is a reddish mottling merging into a broad black lateral line. This line has a yellow diagonal streak through it on most segments, directed anteriorly and rather broken posteriorly on the central segments. Below, the lateral line is yellow mottled with red. This mottling becomes more dense and darkens until it is heavy brown just above the white lateral ridge. Below, the ridge is a deep purplish-red; the tubercles on the setae are ringed with white; the prolegs are dull yellow. The large setae of the previous stage have been augmented by another row placed just above the subdorsal line while the lesser setae are now more numerous. The head is very much the same as in the previous stage, except that the colours are darker and the indentations are more pronounced. This stage lasts some thirteen days and the larvae attain a length of from 12 to 15 mm. **Fourth instar.** Ground-colour still dull pale yellow, but the split dorsal line and the subdorsal line have become confluent by the blackening of the intervening spaces; the subdorsal line droops anteriorly on each segment, giving a wavy margin; the large setae on the first wrinkle are ringed with yellow; the lateral line is broader and the diagonal yellow patch is more pronounced; the white lateral ridge is touched with dull yellow and below this is now black. The small setae are even more numerous than in the last stage, but the large setae remain the same in number. As the larvae develop, the markings, which are well defined at the beginning of this stage, become dull and ill-defined. The black markings become purplish-brown, except the dorsal stripe which remains black on the first three and last three segments. The head is yellowish-brown with dark markings; the setae and indentations are more numerous. This stage lasts twenty-six days or longer and the larvae attain a length of 19.5-21.5 mm. **Final instar.** The larvae are much the same in colour as they were in the final period of the fourth stage, except that the ground-colour is a light reddish-brown and the diagonal patch in the lateral stripe is now totally enclosed and roughly elliptical. The ventral portion, though black, has a green shade. Towards the end of this stage, the markings fade and the black portions become ill-defined. The large setae are truncate and have the appearance of having been torn off. The spiracle is black and slightly raised, though hidden by setae and folds. The surface of the body is covered with minute fluted tubercles, these decrease in size round the large setae, so that it appears as if there is a light patch at the base of each large seta. These tubercles are mainly responsible for the colour scheme. The head is brick-red with black markings, the surface is covered with small setae on fluted tubercles, the large setae are ringed with white; between the setae on the upper portion of the epicrania are numerous indentations; labrum brick-red; mandibles plain

and black. The larvae are very sluggish at times, feeding at night and as a rule lying concealed near the roots by day. Final length 30 mm. In order to pupate the larvae spin a slight mat and fasten their anal claspers to this, then they hang in a loop for two or three days before pupating. **Pupa.** The pupa is suspended by cremastral hooks only. The thorax is black, the wing-cases are black with white streaks between the veins, abdomen at first reddish-brown, which later fades to dull cream; in both cases it is patterned with black and the surface is sparingly studded with setae on flat tubercles. These setae are very similar to those of the final larval stage, but those on the wing-cases are smaller and pointed. The pupal stage in captivity extended over 26 to 28 days.”

Clark, in Van Son, 1955: 68.

Repeats the 1943 publication by Clark, given above.

Larval food:

Ehrharta erecta Lam. (Poaceae) [Clark, 1943; in captivity].

Pennisetum clandestinum Hochst. ex Chiov. (Poaceae) (exotic) [Henning, S., & Henning, G., 1989; in captivity].

****Dira oxylus* (Trimen, 1881)#
Pondoland Autumn Widow**

Leptoneura oxylus Trimen, 1881. *Transactions of the Entomological Society of London* **1881**: 437 (433-445).

Leptoneura oxylus Trimen, 1881. Trimen & Bowker, 1887a.

Dira oxylus Trimen. Swanepoel, 1953a.

Dira oxylus (Trimen, 1881). Dickson & Kroon, 1978.

Dira oxylus (Trimen, 1881). Pringle *et al.*, 1994: 54.



Dira oxylus. Male (Wingspan 55 mm). Left – upperside; right – underside.
Kokstad, KwaZulu-Natal, South Africa. 10 March 2006. J. Dobson.
Images M.C. Williams ex Dobson Collection.

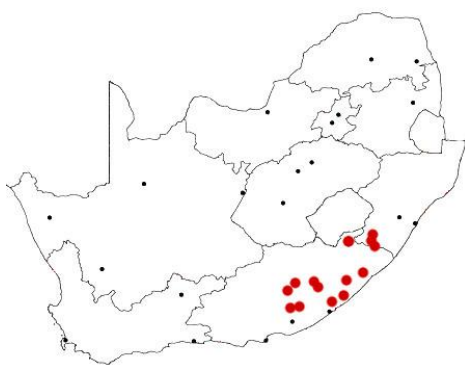


Dira oxylus. Female (Wingspan 52 mm). Left – upperside; right – underside.
Kokstad, KwaZulu-Natal, South Africa. 19 February 2006. J. Dobson.
Images M.C. Williams ex Dobson Collection.

Alternative common name: Pndoland Weduwee (Afrikaans).

Type locality: [South Africa]: “Pinetown (Natal)” [False locality – The type material, furnished by Bowker, apparently originated from the Butterworth district (Pringle *et al.*, 1994)].

Diagnosis: Much larger than *Dira clytus* and always has triple apical ocelli on the forewing. The hindwing underside is darker, with a more regular discal line (Pringle *et al.*, 1994).



Distribution: South Africa –
KwaZulu-Natal – south, Eastern Cape Province.

Distribution: South Africa (KwaZulu-Natal – south, Eastern Cape Province).

Specific localities:

KwaZulu-Natal – Kokstad (Swanepoel, 1953); Kingscote (-30.0327 29.3537) (J. Greyling, pers. comm. 2015).

Eastern Cape Province – Butterworth district (TL; Bowker); Cathcart (Swanepoel, 1953); Queenstown (Swanepoel, 1953); Indutywa (Swanepoel, 1953); Mazeppa Bay (Swanepoel, 1953); Bashee River (Swanepoel, 1953); Emjanyana (Swanepoel, 1953); East London (Swanepoel, 1953); Stutterheim (Van Son, 1955); Ngqeleni (Van Son, 1955); Ibeka (Van Son, 1955), Alice (Mecenero *et al.*, 2013).

Habitat: Grassland.

Habits: Specimens fly with a slow, flapping flight over grassy slopes, just above grass level. They are active in the cooler hours of the morning, seeking the shade of rocks as the day gets warmer. By noon they may already be off the wing. They thus appear to be more sensitive to heat than the closely related *Dira clytus*. The females are considerably less active than the males (Pringle *et al.*, 1994).

Flight period: January and February but specimens may also be seen in December and March (Van Son, 1955; Pringle *et al.*, 1994).

Early stages:

Clark, in Van Son, 1955: 62 [complete account].

Egg – scattered in grass; elongated dome-shaped; 1,0 diameter by 1,0 mm high; watery yellow gradually changing to light brown; almost imperceptible hexagonal tracery on chorion; egg stage 11 days. **First instar larva** – eats way out near top and after short rest partially consumes shell; crawls to edge of blade of grass and feeds at intervals; 2,25 mm long; white with pink dorsal and lateral stripes; also pink just below lateral ridge; ventral portions white; head pale dull yellow with pale brown setae and ocelli on black patch; three rows of spines on white moles on upper portion of body; those astride dorsal line brown and on right side lean forward on segments 1-10, the remainder lean backward but on the left side only those on segments 1-3 lean forward. The subdorsal row of spines are watery white and lean forward on both sides on segments 1-10. The remainder lean backward. The lateral row placed in the centre of the lateral line are brown and curve forward on segments 1-11 on both sides, they have an upward trend on the first segment but drop progressively to an almost horizontal position on segment 5, then rise again to the 11th segment. The spine on the next segment curves backward. The lateral ridge has a pair of pale golden-brown spines per segment except the 1st and 12th which only have one. As the larva progresses the stripes gradually turn red and the dorsal line is split. Thin red subdorsal and spiracular lines appear and later slight red mottling develops above the lateral line. After some ten days, when the larvae have attained a length of 6 mm, they settle down to their first moult.

The discarded skin is not eaten. **Second instar.** The general ground colour is pale dull yellow with a purple pink dorsal line split from the 2nd to the 8th segment where it joins together and darkens. The subdorsal lines are plum coloured and so is the lateral line, but it darkens to almost black round the mole of the primary setae of the former instar. The spiracular line is salmon-red and the lateral ridge is white, below this is a pale purple spotted by the white spine-bearing moles. The claspers are yellowish and have black shields. The original moles astride the dorsal line have two small moles, bearing small white spines. Next to them and on the next wrinkle, and in the same line there is another mole with a pale brown spine, the next wrinkle has a very small spined mole and the fourth wrinkle has a fairly large mole with a brown-tipped spine. The number of spines on the subdorsal row of spined moles has been increased by similar moles on the second wrinkle and a small one on the first. The lateral row has three additional but smaller moles. The spined moles of the rows have modified additions on the first three segments and the last three. The body is sparingly sprinkled with lesser spined moles, and the number on the lateral ridge has increased. In this and the subsequent instar the larvae live concealed at the roots of the grass by day and crawl up to the tip of a blade after dark to feed. The larvae in this instar grow to 9½ mm in nine days. **Third instar.** The larvae are very pale pinkish-white or very pale dull yellow with semi-split black dorsal line and very indistinct pale purple subdorsal lines which, however, become more distinct and blackish over the first three segments, and these lines continue partly on to the pale dull yellow head. The lateral line is black, but rather broken by blotches on the 3rd, 4th and 5th wrinkles, and with a prominent white intrusive diagonal patch stretching upward from the 1st wrinkle to envelop the primary setae on the 2nd wrinkle. The patch disappears after the 8th segment and is very modified on 2 and 3 and absent of segment 1. The ventral portions are blackish except the prolegs which are dull white with a touch of green. The main setae of the last instar are present and continue throughout the subsequent instars. The lesser setae are more numerous, especially on the ventral portions. In this instar larvae grow to 14 or 14½ mm, but the duration is much longer than the former, being twenty-five days, some larvae however taking much longer. **Fourth instar.** The larvae are dull yellow or dull whitish with a heavy semi-split black dorsal line, very thin and broken black subdorsal lines and broad black lateral, with the white diagonal spot now cutting the line completely. The lateral ridge is whitish, but sometimes has a touch of salmon, and the ventral portions are black. The head is also black, but the main setae are on whitish or dull yellow moles, giving the head a spotted appearance. The whole body is now heavily coated with small grey setae. The larvae grow to from 22 to 24 mm in some fifty-eight days, but the duration is very variable. **Final instar.** Similar to the previous instar, but the various black markings have spread, leaving only traces of the general ground-colour. The setae are relatively smaller, but the major setae of the second instar can easily be picked out. **Pupa.** 13.5 mm long, dark fuscous throughout, without the variegated pattern found in *clytus*. Pupal stage about twenty-five days." "It is of interest to note that although under natural conditions there appears to be only one brood each year, larvae bred in captivity sometimes do not aestivate, but pupate, and some emergences occur in the late autumn or early spring."

Larval food:

Grass (Poaceae) [Clark, *in* Van Son, 1955: 62].

Ehrharta erecta Lam. (Poaceae) [Dickson & Kroon, 1978: 38; in captivity].

Relevant literature:

Garvie, 2005a [Collecting notes].

****Dira swanepoeli* (van Son, 1939)#**

Northern Autumn Widow

Leptoneura swanepoeli van Son, 1939. *Annals of the Transvaal Museum* **20**: 47 (47-51).

Dira swanepoeli Van Son. Swanepoel, 1953a.

Dira swanepoeli (Van Son, 1939). Dickson & Kroon, 1978.

Dira swanepoeli (Van Son, 1939). Pringle *et al.*, 1994: 55.



Dira swanepoeli swanepoeli. Male (Wingspan 62 mm). Left – upperside; right – underside.
Louis Trichardt, Limpopo Province, South Africa. 9 March 2003. J. Dobson.
Images M.C. Williams ex Dobson Collection.

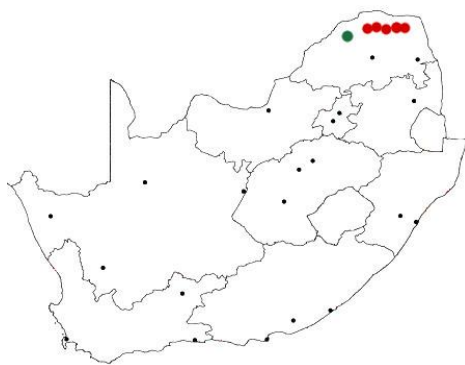


Dira swanepoeli swanepoeli. Female (Wingspan 64 mm). Left – upperside; right – underside.
Hanglip Forest, Limpopo Province, South Africa. 15 March 1980. G. Henning.
Images M.C. Williams ex Henning Collection.

Alternative common names: Soutpansberg Weduwee (ssp. *swanepoeli*); Blouberg Weduwee (ssp. *isolata*) (Afrikaans).

Type locality: South Africa: “Mountain Inn, near Louis Trichardt, Zoutpansberg district, Northern Transvaal”.

Diagnosis: Can be distinguished from the closely related *Dira oxylus* by the fact that the discal line protrudes further outwards in area 3 and not in area 4 as in *oxylus* (Pringle *et al.*, 1994).



Distribution: South Africa –
Limpopo Province. [red dots – ssp.
swanepoeli; green dot – ssp. *isolata*]

Distribution: South Africa.

Habitat: Montane grassland.

Habits: Often settles in the shade of trees and rocks. The flight is slow and ponderous, and usually of short duration (Pringle *et al.*, 1994).

Flight period: February and March (Pringle *et al.*, 1994).

Early stages:

Clark, in Van Son, 1955: 64.

“Egg. The eggs are laid apparently indiscriminantly in grass in the same way as in *clytus*. They are pale yellow when laid, deepening to yellow until young larvae begin to take shape. They are 1.1 mm in diameter by 1.1 mm high, and the surface is covered generally with a fine irregular netting tracery. The egg stage is 12 days. **Larva.** **First instar.** The young larva eats its way out near the top of the egg and devours the shell. It is 2.5 mm long on emerging, white with dark pink dorsal and lateral stripes, the portion below the lateral ridge is touched with the same colour. The legs and prolegs have a yellowish tint. On each side of the dorsal stripe there is a row of dark brown hairs mounted on white moles, which are situated on the first wrinkle of each segment. On the right side those on the first ten and on the left side on first three all lean forward, the remainder lean backward. Lower down there is a row of small white setae also set on white moles, but situated on the fourth wrinkle. These lean in the same direction as those on the dorsum. On the 1st segment the dorsal hairs are pointed and on the first three segments there are a pair of black setae, one long and one short, between the rows. On the lateral line there is another row of dark brown setae, one per segment, placed on the second wrinkle; these lean forward at the front, but gradually straighten out until the 11th segment where they are almost straight out but inclined forward. The seta on segment 12 leans backward. On the prolegs there is a cluster of white setae on black moles surrounding a dark shield. There are generally ten setae. The larva feeds on edge of a young blade of grass, lying along edge and crawling backwards as it feeds. As the larvae grow, they develop a thin red subdorsal line and later a spiracular line, the portion above this line gradually changing to dull green. The lateral ridge remains white. To moult, the larva lies along the blade of grass and remains motionless for one or two days, then casts its skin. It does not eat the discarded skin. The stage lasts nine days and the larva grows to 6½-7 mm. **Second instar.** The larva has a reddish dorsal line, which is split on the central segments, a thin subdorsal line, a heavy lateral line, and is speckled above the lateral ridge with pink. The centre of the ridge is often touched with yellow, is reddish below, and the legs and prolegs are yellow. After a few days, the space between the white area on either side and the lateral stripe becomes mottled with red, with shades of salmon. The head is pale yellow with black setae rising from blackish patches, the front of the head is adorned with an inverted half-moon. The mandibles are plain. The main rows of hairs remain, and there is an additional row just below the subdorsal line. On the rows astride the dorsal line the original hair is augmented by two smaller hairs, one on each of the more important wrinkles; the hairs on the new subdorsal row correspond with these two. There are two prominent hairs just above the spiracles, and on the last wrinkle just below the lateral line there is a single hair. All these hairs or setae are prominent throughout the remaining stages, being augmented by an increasing number of small setae with each stage. The head is golden yellow; there are more setae set on studs; on the upper portion there are round indentations. The habits are as in the first stage, but there are longer intervals between the feeds. This stage lasts nine days, and the larvae attain a length of from 9.5 to 10 mm. **Third instar.** The colour is dull yellowish-white, the brown or dull purple dorsal line is split except on the last segments where it forms a solid purplish-black line. The brown or dull purple subdorsal line is broad on the anterior wrinkle and very thin on 4th or 5th wrinkle, and is dotted with black, the broad black lateral line is cut out round the main seta, leaving a yellow intrusion. Below the lateral line, the body is mottled with salmon, but the main portion of the lateral ridge is white; below this, it is black, the prolegs having a green touch. The stage lasts 15-20 days, and the larvae grow to 15 mm. **Fourth instar.** Ground-colour still dull yellow, dorsal line deep black, but split until the three last segments, subdorsal line firm and black, sometimes bulging on 2nd wrinkle, but the space between this line and the lateral line has now been largely encroached upon by black except round the subdorsal row of hairs. The black colouring has obliterated the lateral line and extended to the yellowish-white lateral side except in the vicinity of the main seta, as in the previous stage. There is a very light form in which all markings except black on lateral stripe and black posterior end of dorsal line, are brown to pinkish-brown. This instar lasts 30-40 days, and the larva reaches a length of 22-26 mm. **Final stage.** As above, but the black colour above the whitish lateral ridge is largely replaced by brown, except near the spiracles. The main setae are straight and pointed, and are mounted on white moles. The small setae on the upper parts are tomentose. The surface of the body is covered with minute fluted moles. The head is red-brown with dark patches, and in parts tinged with pale dull salmon. The surface is covered with spiral setae on dark fluted moles; interspaced with these are circular indentations which, however, fade away halfway down. The mandibles are salmon, shading down to black at the biting edge which is plain and without serrations. The larvae attain their full length of 35 mm fairly quickly, but after this do not increase in length. They feed on the edge of a grass blade. Two bites are taken, then head is moved up and another two bites are taken. The larva crawls backwards as it feeds, but the bites always seem to be in pairs and very deliberate. In the groups I have bred, one larva took 62 days and died while pupating; another took 113 days, pupated and emerged 23 days later, while others were still in the larval stage and died two weeks later. As in the case

of *clytus*, the present species reaches its full size, and when fully fed, hibernates in the larval stage and only pupates in the late summer, emerging some twenty days after. When ready to pupate, the larva chooses a suitable twig or stalk and after spinning a coarse silken mat fastens its anal claspers to this, hangs downward, later looping up, and remains in this position until it pupates. **Pupa.** Yellow-brown with dark markings, the surface is sparsely covered with minute setae which are much longer than in *clytus* and are a very poor reproduction of the beautiful flower-shaped setae of that species; many setae are merely long stems with a cleft top; the cremastral hooks are more bent than in *clytus*. Pupal stage in the only specimen observed was twenty-three days.”

Larval food:

Ehrharta erecta Lam. (Poaceae) [Dickson & Kroon, 1978: 38].

Eragrostis aspera (Jacq.) Nees (Poaceae) [Dickson & Kroon, 1978: 38].

Grass (Poaceae) [Clark, *in* Van Son, 1955: 65].

Pennisetum clandestinum Hochst. ex Chiov. (Poaceae) [Henning, S., & Henning, G., 1989].

Dira swanepoeli swanepoeli (van Son, 1939)#
Northern Autumn Widow

Leptoneura swanepoeli van Son, 1939. *Annals of the Transvaal Museum* 20: 47 (47-51).

Dira swanepoeli swanepoeli (Van Son, 1939). Dickson & Kroon, 1978.

Dira swanepoeli swanepoeli (Van Son, 1939). Pringle *et al.*, 1994: 55.



Dira swanepoeli swanepoeli. Male (Wingspan 62 mm). Left – upperside; right – underside.
Louis Trichardt, Limpopo Province, South Africa. 9 March 2003. J. Dobson.
Images M.C. Williams ex Dobson Collection.



Dira swanepoeli swanepoeli. Female (Wingspan 64 mm). Left – upperside; right – underside.
Hanglip Forest, Limpopo Province, South Africa. 15 March 1980. G. Henning.
Images M.C. Williams ex Henning Collection.

Alternative common name: Soutpansberg Weduwee.

Type locality: South Africa: “Mountain Inn, near Louis Trichardt, Zoutpansberg district, Northern Transvaal”.

Distribution: South Africa (Limpopo Province).

Specific localities:

Limpopo Province – Mountain Inn, near Louis Trichardt (TL; Swanepoel); above Hangklip Forestry (van Son, 1955); Buzzard Mountain Retreat [-23.012 29.765] (Williams, unpub., 2015); Gundani (J. & C. Dobson); Thathe Vondo (G. Diedericks – SABCA VM); Mphapuli Cycad Reserve (Dietmar Ley, 2 April 2010 – pers. Comm. Andre Coetzer).

Dira swanepoeli isolata van Son, 1955#
Blouberg Northern Autumn Widow

Dira swanepoeli isolata van Son, 1955. *Transvaal Museum Memoirs* No. 8: 66 (1-166).

Dira swanepoeli isolata Van Son. Dickson & Kroon, 1978.

Dira swanepoeli isolata Van Son, 1955. Pringle *et al.*, 1994: 55.



Dira swanepoeli isolata. Male (Wingspan 61 mm). Left – upperside; right – underside.
Blouberg, Limpopo Province, South Africa. 10 March 2012. J. Dobson.
Images M.C. Williams ex Dobson Collection.



Dira swanepoeli isolata. Female (Wingspan 64 mm). Left – upperside; right – underside.
Blouberg, Limpopo Province, South Africa. 10 March 2012. J. Dobson.
Images M.C. Williams ex Dobson Collection.

Alternative common name: Blouberg Weduwee (Afrikaans).

Type locality: South Africa: “Blaauwberg, Northern Transvaal”.

Diagnosis: Smaller than the nominate subspecies, with lighter and broader markings surrounding the

forewing ocelli and an additional ocellus in the postdiscal series on the hindwing upperside (Pringle *et al.*, 1994).

Distribution: South Africa (Limpopo Province)

Specific localities:

Limpopo Province – northern slopes of the Blouberg (TL; Swanepoel).

Conservation status: Classified as ‘Rare (Restricted Range)’ by Mecenero *et al.*, 2013.